What is claimed is:

1. A control packet processing apparatus for receiving a control packet used to exchange a variety of information among devices that support a spanning tree protocol, comprising:

a receiving device receiving the control packet;

a buffer device storing the received control packet; and

a control device autonomously transferring the control packet stored in the buffer device to a processing unit re-configuring a communication route of a spanning tree protocol in a specific cycle when no control packet is received for a specific period.

2. A control packet processing apparatus for receiving a control packet used to exchange a variety of information among devices that support a spanning tree protocol, comprising:

a generation device generating a control packet instructing a receiving side device to stop transmitting the control packet to prevent the re-configuration of the communication route of a spanning tree protocol when the receiving side device receives no control packet for a specific period; and

a transmitting device transmitting the generated control packet.

3.   A control packet processing apparatus for
5 receiving a control packet used to exchange a variety of information among devices that support a spanning tree protocol, comprising:

an input device inputting an instruction to start an automatic transmission of a control packet; and
10   a transmitting device autonomously transmitting a control packet for a specific period at specific intervals from when a processing unit outputting a control packet transmit request stops until the processing unit restarts according to the instruction.
15

4.   The control packet processing apparatus according to claim 3, wherein

said input device inputs stop instruction to stop the automatic transmission of the control packet, and
20   said transmitting device stops autonomously transmitting the control packet according to the stop instruction.

5.   The control packet processing apparatus according
25 to claim 3, further comprising

a table processing device,

wherein

said transmitting device has a table storing a correspondence relationship between an address and a

5   port of a frame transferred according to the spanning tree protocol, and

the table processing device discards a table flush instruction accompanying the re-configuration of the communication route of a spanning tree protocol while

10   said transmitting device is autonomously transmitting the control packet.

6.   The control packet processing apparatus according to claim 3, 4 or 5, which prevents another device from

15   detecting a change in the communication route of a spanning tree protocol, and recovers the communication route just before the stoppage of an operation of the processing unit when the processing unit stops or restarts.

20

7.   The control packet processing apparatus according to claim 3, 4 or 5, further comprising

a receiving device normally receiving a control packet transmitted by another device while autonomously

25   transmitting the control packet.

8.   The control packet processing apparatus according to claim 7, wherein

said transmitting device monitors a receiving situation of a control packet transmitted from the another device, and stops the transfer of a data frame according to the spanning tree protocol when a change is detected.

9.   The control packet processing apparatus according to claim 7, wherein

said transmitting device monitors a receiving situation of a control packet transmitted from the another device, and initializes the spanning tree protocol when a change is detected.

10.   The control packet processing apparatus according to claim 7, wherein

said transmitting device monitors a receiving situation of a control packet transmitted from the another device, and modifies contents of a control packet autonomously transmitted according to a changed contents when contents of the received control packet change.

11. A storage medium on which is recorded a program for enabling the control packet processing apparatus to receive a control packet used to exchange a variety of information among devices that support a spanning

5   tree protocol, said program comprising:

storing the received control packet in a buffer device; and

autonomously transferring the control packet stored in the buffer device to a processing unit

10   re-configuring a communication route of a spanning tree protocol in a specific cycle when no control packet is received for a specific period.

12. The storage medium according to claim 11, wherein

15   said transfer process includes generation of a pseudo-receiving trigger indicating the reception of a control packet in the specific cycle from when an instruction to stop generating the pseudo-receiving trigger is received until an instruction to stop the

20   generation of the trigger is received, and transfer of the control packet stored in said buffer device to the processing unit every time the pseudo-receiving trigger is generated.

25   13. The storage medium according to claim 11, wherein

said program enables said control packet processing apparatus to start said transfer process when said control packet processing apparatus receives a control packet instructing said control packet
5   processing apparatus to stop transmitting the control packet.

14.   The storage medium according to claim 13, wherein said transfer process includes generation of a
10   pseudo-receiving trigger indicating the reception of a control packet in the specific cycle, and transfer of the control packet stored in said buffer device to the processing unit every time the pseudo-receiving trigger is generated.
15

15.   The storage medium according to claim 13, wherein said control packet processing apparatus receives a bridge protocol data unit as a control packet to be stored in said buffer device and receives a bridge
20   protocol data unit containing a flag instructing a transmission stoppage as the control packet instructing the transmission stoppage.

16.   The storage medium according to claim 13, wherein
25   said control packet processing apparatus receives

a bridge protocol data unit as a control packet to be stored in said buffer device and receives another control packet other than the bridge protocol data unit as the control packet instructing the transmission

5   stoppage.

17.   The storage medium according to claim 13, wherein when said control packet processing apparatus receives a control packet instructing said control

10   packet processing apparatus to restart transmitting the control packet, said program enables said control packet processing apparatus to stop said transfer process.

18.   The storage medium according to claim 17, wherein

15   said control packet processing apparatus receives a bridge protocol data unit as the control packet to be stored in said buffer device, receives a bridge protocol data unit containing a flag instructing transmission stoppage as a control packet instructing

20   transmission stoppage and receives a bridge protocol data unit containing a flag instructing transmission restart as a control packet instructing transmission restart.

25   19.   The storage medium according to claim 17, wherein

said control packet processing apparatus receives a bridge protocol data unit as the control packet to be stored in said buffer device, and receives another control packet other than the bridge protocol data unit

5 as both a control packet instructing transmission stoppage and a control packet instructing transmission restart.

20. The storage medium according to claim 13, wherein

10 when said control packet processing apparatus receives a subsequent control packet, said program enables said control packet processing apparatus to stop said transfer process.

15 21. A storage medium on which is recorded a program for enabling the control packet processing apparatus to receive a control packet used to exchange a variety of information among devices that support a spanning tree protocol, said program comprising:

20 generating a control packet instructing a transmission stoppage for the control packet to prevent a re-configuration of the communication route of a spanning tree protocol when no control packet is received for a specific period in the receiving side

25 device; and

transmitting the generated control packet.

22. The storage medium according to claim 21, wherein said control packet processing apparatus transmits a bridge protocol data unit as a control packet to be transferred among devices, and generates a bridge protocol data unit containing a flag instructing a transmission stoppage as a control packet instructing transmission stoppage.

23. The storage medium according to claim 21, wherein said control packet processing apparatus transmits a bridge protocol data unit as a control packet to be transferred among devices, and generates another control packet other than the bridge protocol data unit as a control packet instructing transmission stoppage.

24. The storage medium according to claim 21, wherein when restarting control packet transmission, said program enables said control packet processing apparatus to further perform generation of a control packet instructing transmission restart and transmission of the control packet instructing transmission restart.

25. The storage medium according to claim 24, wherein said control packet processing apparatus transmits a bridge protocol data unit as a control packet to be transferred among devices, generates a bridge

5 protocol data unit containing a flag instructing transmission stoppage as the control packet instructing transmission stoppage and generates a bridge protocol data unit containing a flag instructing transmission restart as the control packet instructing transmission

10 restart.

26. The storage medium according to claim 24, wherein said control packet processing apparatus transmits a bridge protocol data unit as a control packet

15 to be transferred among devices, and generates another control packet other than the bridge protocol data unit as both the control packet instructing transmission stoppage and the control packet instructing transmission restart.

20

27. The storage medium according to claim 21, wherein said program enables said control packet processing apparatus to further restart the control packet transmission by transmitting a subsequent

25 control packet.

28.   A storage medium on which is recorded a program
for enabling the control packet processing apparatus
to receive a control packet used to exchange a variety

5   of information among devices that support a spanning
tree protocol, said program comprising:

inputting an instruction to start an automatic
transmission of a control packet; and

instructing a transmitting device to autonomously

10   transmit a control packet for a specific period at
specific intervals from when a processing unit
outputting a control packet transmit request stops until
the   processing   unit   restarts   according   to   the
instruction.

15

29.   A storage medium on which is recorded a program
for enabling the control packet processing apparatus
to receive a control packet used to exchange a variety
of information among devices that support a spanning

20   tree protocol, said program comprising

autonomously transmitting a control packet for a
specific period at specific intervals from when a
processing unit outputting a control packet transmit
request stops until the processing unit restarts

25   according   to   an   instruction   to   start   automatic

transmission of the control packet.

30. A carrier signal for carrying a program for enabling a control packet processing apparatus to receive a control packet used to exchange a variety of information among devices that support a spanning tree protocol, said program comprising:

storing the received control packet; and

autonomously transferring the control packet stored in the buffer device to a processing unit re-configuring a communication route of a spanning tree protocol in a specific cycle when no control packet is received for a specific period.

31. A carrier signal for carrying a program for enabling a control packet processing apparatus to receive a control packet used to exchange a variety of information among devices that support a spanning tree protocol, said program comprising:

generating a control packet instructing a transmission stoppage of the control packet to prevent the re-configuration of the communication route of a spanning tree protocol when a receiving side device receives no control packet for a specific period; and

transmitting the generated control packet.

32. A carrier signal for carrying a program for enabling a control packet processing apparatus to receive a control packet used to exchange a variety of information among devices that support a spanning tree protocol, said program comprising:

inputting an instruction to start an automatic transmission of a control packet; and

instructing a transmitting device to autonomously transmit a control packet for a specific period at specific intervals from when a processing unit outputting a control packet transmit request stops until the processing unit restarts according to the instruction to start the automatic transmission of the control packet.

33. A carrier signal for carrying a program for enabling a control packet processing apparatus to receive a control packet used to exchange a variety of information among devices that support a spanning tree protocol, said program comprising

autonomously transmitting a control packet for a specific period at specific intervals from when a processing unit outputting a control packet transmit request stops until the processing unit restarts

according to an instruction to start automatic transmission of the control packet.

34. A control packet processing method for receiving
5 a control packet used to exchange a variety of information among devices that support a spanning tree protocol, comprising:

receiving the control packet;

storing the received control packet in a buffer
10 device; and

autonomously transferring the control packet stored in the buffer device to a processing unit re-configuration a communication route of a spanning tree protocol in a specific cycle when no control packet
15 is received for a specific period.

35. A control packet processing method for receiving a control packet used to exchange a variety of information among devices that support a spanning tree
20 protocol, comprising:

inputting an instruction to start an automatic transmission of a control packet; and

autonomously transmitting a control packet for a specific period at specific intervals from when a
25 processing unit outputting a control packet transmit

request stops until the processing unit restarts according to the instruction to start the automatic transmission of the control packet.

5   36.   A control packet processing apparatus for receiving a control packet used to exchange a variety of information among devices that support a spanning tree protocol, comprising:

receiving means for receiving the control packet;
10   buffer means for storing the received control packet; and

control means for autonomously transferring the control packet stored in the buffer device to a processing unit re-configuring a communication route
15   of a spanning tree protocol in a specific cycle when no control packet is received for a specific period.

37.   A control packet processing apparatus for receiving a control packet used to exchange a variety
20   of information among devices that support a spanning tree protocol, comprising:

generation means for generating a control packet instructing a transmission stoppage of the control packet to prevent the re-configuration of a
25   communication route of a spanning tree protocol when

a receiving side device receives no control packet for a specific period; and

transmitting means for transmitting the generated control packet.

5

38. A control packet processing apparatus for receiving a control packet used to exchange a variety of information among devices that support a spanning tree protocol, comprising:

10   input means for inputting an instruction to start an automatic transmission of a control packet; and

transmitting means for autonomously transmitting a control packet for a specific period at specific intervals from when a processing unit outputting a

15 control packet transmit request stops until the processing unit restarts according to the instruction to start automatic transmission of the control packet.